Health & Safety Report

Worker Health and Safety Branch

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OVERVIEW OF THE CALIFORNIA PESTICIDE ILLNESS SURVEILLANCE PROGRAM REPORT

- 1994 -

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CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
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The California Pesticide Illness Surveillance Program

OVERVIEW

Tracking pesticide-related illnesses has been part of California's pesticide regulatory program for more than 25 years. This annual report summarizes the results of illness investigations that were conducted in 1994 and the follow-up and evaluation that continued through 1995. After evaluation, cases are classified according to the likelihood that pesticide exposure caused the illness. In 1994, there were 879 cases classified as "definitely" or "probably" related to pesticide exposure, and another 453 where the circumstances suggested a "possible" relationship to pesticide exposure. Of these 1,332 illnesses, about one-third involved use of pesticides for agricultural purposes and the remainder occurred in other settings. (The term "pesticides" includes not only insecticides but many other kinds of pest-destroying or pest-controlling chemicals, including herbicides, fungicides, rodenticides, insect repellants, and disinfectants and sanitizers.)

About the Program

The California Department of Pesticide Regulation (DPR) has primary responsibility for regulating all aspects of pesticide sales and use to protect public health and the environment. The Department's mission is to evaluate and mitigate impacts of pesticide use, maintain the safety of the pesticide workplace, ensure product effectiveness, and encourage the development and use of reduced-risk pest control practices while recognizing the need for pest management in a healthy economy. These programs include product evaluation before registration, statewide licensing of commercial applicators, dealers and consultants; ongoing monitoring of people and the environment to detect potential for pesticide exposure; safety training for pesticide handlers and field workers; and local use enforcement through county agricultural commissioners.

A key element of this integrated network of programs is illness surveillance. California law has required since 1971 that doctors report illnesses in which pesticide exposure was involved. (See "Background on the Reporting System," below.) The U.S. General Accounting Office in a 1993 report said that California "had by far the most effective and well-established (illness) monitoring system in place." The report also said that the U.S. Environmental Protection Agency (U.S. EPA) "relies heavily on the pesticide illness data collected by the California monitoring system…and (that U.S. EPA) has tried to encourage selected states to develop monitoring systems modeled after the California system."

Illness records help DPR document and evaluate the circumstances of pesticide exposures that result in injuries and illnesses. In doing so, the monitoring system is a check on the effectiveness of DPR's worker safety program. Information from the database feeds back into the regulatory programs to alert regulatory officials to possible pesticide-related problems.

DPR also uses Illness data to develop or support changes in pesticide registrations or use. Scientific staffs at DPR and U.S. EPA also use the information to improve safety information on pesticide labels. Additionally, illness investigations focus attention of enforcement staff on types of pesticide uses that have resulted in overexposure.

County agricultural commissioners investigate all reported pesticide illnesses. Staff of DPR's Worker Health and Safety Branch then evaluates their reports. DPR analysts classify the reports according to the circumstances of exposure and the likelihood that such an exposure would have resulted in the symptoms reported. Because this process can be complex, the results--as summarized in this report--must be interpreted with an understanding of the policies applied.

The goal of the illness surveillance program is to record all adverse effects of pesticides on health. This includes effects of active ingredients, inert ingredients, impurities, and breakdown products. It also includes all modes of action. For example, an illness may be classified as a "probable" reaction to exposure to a pesticide even when evidence suggests that the primary toxic effect of the pesticide active ingredient may *not* be the cause. Effects caused by the active ingredients' pharmacologic effects are not set apart from those caused by a chemical's irritant, allergenic, odorous, or explosive properties.

DPR has been concerned for some time about consistent delays in receiving illness reports. To deal with the problem, DPR began a project in 1994 to increase physician familiarity with the law requiring them to immediately report pesticide illnesses to local health officers.

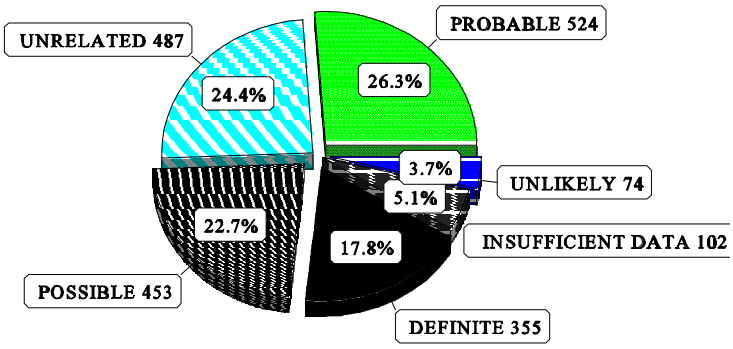
Working with the Department of Industrial Relations, DPR sent summaries of the requirements to all licensed physicians in the state. DPR also changed its procedures for logging new cases to record the identity of the physician involved. Since 1995, DPR has been sending warning letters to doctors who file reports with the workers' compensation system on pesticide illnesses but do not report them to the surveillance program

1994 Findings

During 1994, DPR received reports of 1,995 people whose health may have been affected by pesticide exposure. This was 5 percent fewer cases than were reported in 1993. Occupational exposures (those that occurred while the affected people were at work and eligible for workers' compensation) accounted for 1,725 of the 1,995 cases identified.

After investigation, analysts found that pesticide exposure had been at least a possible factor in 1,332 of the 1,995 cases. (*See figure, right* for a breakdown of illness classifications.)

Of those 1,332 cases, about one-third (or 448 cases) involved use of pesticides for agricultural purposes and the remainder (884 cases) occurred in other settings. The percentage of illnesses caused by exposure to agricultural pesticides continues to decline.



After evaluation, illness cases are classified according to their potential relationship to pesticide exposure. This chart shows the breakdown of 1994 cases according to the likelihood that the illness symptoms were caused by pesticide exposure.

Of the 879 cases classified as definitely or probably related to pesticide exposure, 20 persons were hospitalized and 165 lost time from work. Of the 453 cases classified as possibly related to exposure, 4 were hospitalized and 104 lost work time.

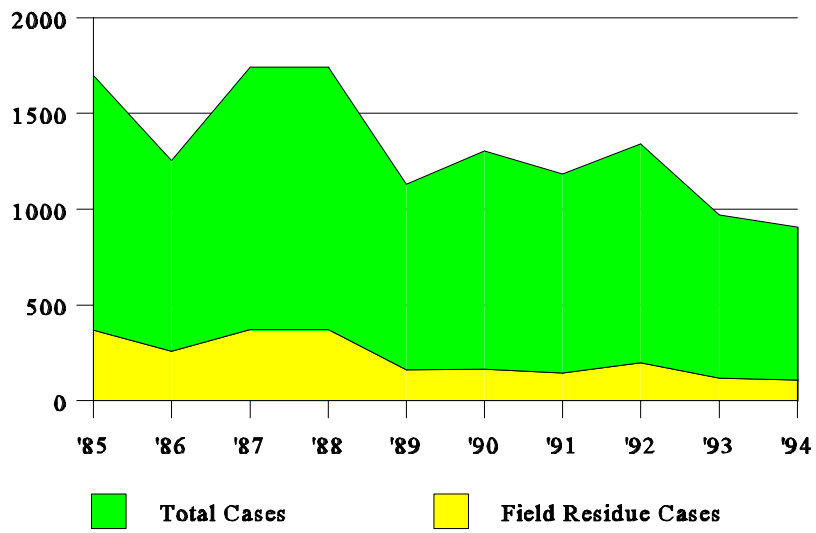
Antimicrobial chemicals (used to control microbial pests) are the pesticides most frequently implicated in illness reports. This is not surprising, considering they are the most commonly used pesticides.

The antimicrobials most commonly associated with illnesses or injuries are two sanitizers, chlorine gas and sodium hypochlorite. Chlorine gas is typically used to control bacterial contamination of water. Sodium hypochlorite (the active ingredient in chlorine bleach) is often used to sanitize food processing equipment.

Most antimicrobial illnesses involve irritant effects on the eyes or skin. Illness reports in this category have declined each year since 1990. In 1994, they had dropped to just 63 percent of the 1990 level.

These familiar pesticides are used daily in all health care facilities, restaurants and public accommodations, as well as in many homes. With this widespread use, the reported incidence of rashes, coughs and eye irritation is not surprising. Although numerous, DPR considers the complaints received annually for this category to represent a modest risk for users of such ubiquitous chemicals.

Illnesses definitely, probably or possibly attributable to agricultural field residue remained low (109) in 1994.



The number of illnesses attributable to agricultural field residue has been declining since 1989 and continues to remain low.

This trend began in 1989. Since then, California has averaged 149 reported field residue cases per year, compared to an average of 279 cases annually from 1982 through 1988. (*See figure, this page.)*

Six consecutive years of fewer field worker illnesses may be a reflection of stricter regulatory control leading to better work practices. The drop in number of illnesses followed withdrawal of the insecticide phosalone from use and action by DPR to lengthen the reentry intervals for the pesticides methomyl and propargite.

Six crashes of aerial applicators, three of them fatal, were investigated in 1994. There was no evidence that pesticide toxicity contributed to these accidents.

One young man died after breaking into his apartment building while it was being fumigated. Ten episodes were reported of pesticide ingestion. In two cases, the victims died. Two of the non-fatal ingestions were clearly unintentional. An elderly woman who had lost her sense of smell was hospitalized for two weeks after taking a mouthful of a pesticide brought to her house in a soft drink bottle. A four-year-old child spent a day in the hospital after eating an unregistered, illegal pesticide made to resemble common chalk. Storing pesticides in food containers or in any container without an appropriate label is illegal and very dangerous.

Background on the Reporting System

California physicians must report by telephone to their local health department any illness or injury they suspect of being related to pesticide exposure. The health department informs the county agricultural commissioner and also completes a pesticide illness report. Copies of this report are distributed to the State Office of Environmental Health Hazard Assessment, to the California Department of Industrial Relations (DIR), and to the De partment of Pesticide Regulation (DPR).

Because physicians often fail to report illnesses to the county health department, DPR's Worker Health and Safety Branch also reviews illness reports submitted to the State workers' compensation system. Any report that mentions a specific pesticide or pesticides in general as a possible cause of injury is investigated. Reports that mention unspecified chemicals also are investigated if the setting is one in which pesticide use is likely. Reliance on reports from the workers' compensation system inevitably biases the surveillance program toward occupational exposures. Therefore, despite the effort invested and the preeminence of the reporting system, its completeness is an ongoing concern. People who do not consult physicians are unlikely to come to the attention of the system. The likelihood is very good, however, that acute illnesses treated under workers' compensation will be reported to DIR, where review by WH&S will recognize pesticide-related cases. Although this should be sufficient to identify trends with pesticide use, it limits the conclusions possible about the total number of people affected.

The agricultural commissioner of the county where the incident occurred investigates all cases, whether identified by direct physician reporting or by review of workers' compensation reports. DPR provides instruction, training and technical support for performing investigations. The commissioners prepare reports describing the circumstances in which pesticide exposure may have occurred and any other relevant aspects of the case. They submit these reports to DPR for evaluation and classification. If the investigation reveals that additional persons were affected, they are identified in the report and entered into the database.